

SEQUENCE LISTING

<110> Strachan, Lorna
Sleeman, Matthew
Abernethy, Nevin
Onrust, Rene
Kumble, Anand
Murison, Greg

<120> Compounds isolated from stromal cells
and methods for their use

<130> 11000.1037

<160> 20

<170> FastSEQ for Windows Version 3.0

<210> 1
<211> 803
<212> DNA
<213> Mouse

<400> 1

gttctgaatg	ggagcatcag	ccctctctgg	gctgttgccc	cgacattaca	ggtcctgtct	60
ctcagggacg	tgggccttgg	ttctggcgct	gcagagatgg	acttctctgc	gtttgggaat	120
ctgcgggcgt	tggatctgtc	gggaaactcc	ctgaccagct	tccaaaagtt	caagggcagt	180
ttggcccttc	ggactctcga	cctccgcaga	aactctctca	cgccctccc	tcagagggtt	240
gtgtccgagc	agcctctgag	gggtctgcag	accatctacc	tcagccagaa	cccttatgac	300
tgctgtgggg	tggaaggatg	gggggccttg	cagcagcact	tcaagactgt	tgcggaactg	360
tccatgggtca	cttgcaacct	ctcttccaag	atcgctccgtg	tggtggagct	gcccgaaggc	420
ctgcctcagg	gctgtaagtg	ggaacagggtg	gacactggtc	tcttctacct	cgtgctcatc	480
ctgcccagct	gcctcaccct	gctggtggcc	tgtactgtcg	tcttctcac	ttttaagaag	540
cctttgcttc	aggtcaccaa	gagccgctgc	cactggctct	ccatatactg	accctgtgctg	600
caaggctaga	gacttggttt	ttcctcgagg	atgcgtctct	ccgctggatc	tttacttttg	660
caggggtcga	gtgtgatgca	ttgaagggtta	aaactgaaat	ttgaaagagt	tccatcctca	720
gtcccatata	cttctcctcc	catccgtgtg	atttatcctc	attgtcctgg	tgaaatatatt	780
attaaacgac	attctgtgag	att				803

<210> 2
<211> 689
<212> DNA
<213> Mouse

<220>
<221> CDS
<222> (35) ... (556)

<400> 2

gtcgcctgag	gtccccgccg	acgacgcact	cacc	atg	gcg	cct	gct	aac	ctt	ggg	55
				Met	Ala	Pro	Ala	Asn	Leu	Gly	
				1				5			

ctg	acg	ccg	cac	tgg	gtg	atg	ctc	ctc	ggg	gcc	gtg	ctg	ctg	ttg	ctt	103
Leu	Thr	Pro	His	Trp	Val	Met	Leu	Leu	Gly	Ala	Val	Leu	Leu	Leu	Leu	

10				15				20								
ctg	tcc	gga	gcc	tcc	gcg	cag	gaa	cct	ccg	aga	gtg	ggg	tgc	tct	gag	151
Leu	Ser	Gly	Ala	Ser	Ala	Gln	Glu	Pro	Pro	Arg	Val	Gly	Cys	Ser	Glu	
25				30				35								
tac	aca	aac	aga	tcc	tgt	gaa	gag	tgc	ctc	agg	aat	gtc	tcc	tgt	ctg	199
Tyr	Thr	Asn	Arg	Ser	Cys	Glu	Glu	Cys	Leu	Arg	Asn	Val	Ser	Cys	Leu	
40				45				50				55				
tgg	tgc	aat	gag	aac	aag	gcg	tgt	atg	gac	tac	cca	gtg	agg	aaa	atc	247
Trp	Cys	Asn	Glu	Asn	Lys	Ala	Cys	Met	Asp	Tyr	Pro	Val	Arg	Lys	Ile	
60				65				70								
ttg	ccc	cct	gct	tct	ctc	tgt	aaa	ttg	agt	tcc	gct	cgc	tgg	ggc	gta	295
Leu	Pro	Pro	Ala	Ser	Leu	Cys	Lys	Leu	Ser	Ser	Ala	Arg	Trp	Gly	Val	
75				80				85								
tgc	tgg	gtg	aac	ttc	gag	gcc	ttg	atc	atc	acc	atg	tcg	gtc	ctg	ggg	343
Cys	Trp	Val	Asn	Phe	Glu	Ala	Leu	Ile	Ile	Thr	Met	Ser	Val	Leu	Gly	
90				95				100								
ggc	tct	gtg	ctc	ctg	ggc	atc	act	gtg	tgc	tgc	tgc	tac	tgc	tgc	cgc	391
Gly	Ser	Val	Leu	Leu	Gly	Ile	Thr	Val	Cys	Cys	Cys	Tyr	Cys	Cys	Arg	
105				110				115								
cgg	aag	aag	agc	cgg	aag	cca	gac	aag	agc	gat	gag	cgg	gcc	atg	aga	439
Arg	Lys	Lys	Ser	Arg	Lys	Pro	Asp	Lys	Ser	Asp	Glu	Arg	Ala	Met	Arg	
120				125				130				135				
gag	cag	gag	gag	agg	aga	gtg	cgg	cag	gag	gaa	agg	agg	gcg	gaa	atg	487
Glu	Gln	Glu	Glu	Arg	Arg	Val	Arg	Gln	Glu	Glu	Arg	Arg	Ala	Glu	Met	
140				145				150								
aag	tca	aga	cat	gat	gaa	atc	agg	aaa	aaa	tac	ggg	ctg	ttt	aaa	gaa	535
Lys	Ser	Arg	His	Asp	Glu	Ile	Arg	Lys	Lys	Tyr	Gly	Leu	Phe	Lys	Glu	
155				160				165								
caa	aac	ccg	tat	gag	aag	ttc	taaggtggct	ggcacacact	tgtgggtggat							586
Gln	Asn	Pro	Tyr	Glu	Lys	Phe										
170																
cggtgcagttc	cagagtttcc	tggtgaatgca	ctccccagca	gagcctgcag	agacctcacc											646
accatggcca	cccttgacct	gggtgatccc	tcagcctcta	ctg												689

```
<210> 3
<211> 619
<212> DNA
<213> Mouse
```

<400> 3						
ggcaccagg	aagccctgc	gcggcctgtc	ccacagaacc	tgcattcctca	gatgccgccc	60
tatgcctttg	ttcaccacc	cttccccctg	ccacctgtgc	ggcccggtgtt	caacaacttc	120
cccatcaaca	tgggtcctgt	gcccgtctcc	tatgtcccc	ctctgcccaa	cgtgcgtgtc	180
aactatgact	ttggccacat	gcacgtgccc	ctggagcaca	acctgccc	gcactttggc	240
cccccaacc	ggcatcgctt	ctgacaccca	aagccctgtc	agccgtgccg	agtctgtagg	300
agggcccagt	ctcatcttct	gagtaggggt	gaaggcctcc	attccctctc	gaaagtggac	360

gcgtgtcctc	ctgctcttac	ctttgcaagg	tccatgctcc	ttcaggtctg	atgccctctg	420
ggtgctgatt	gtcactgggc	caattatagg	gcagctccct	agtctgccat	cttagcagcc	480
aatccagtgg	ccctgaccat	gaagcaaggc	ctctaactgt	ttgccatact	tcctccccag	540
cagcccaatg	aaagcccagg	gggaaatggc	ctaccatccc	taagccaggg	ctctctcctt	600
gttgcccaag	gcccaactta					619

<210> 4
 <211> 1630
 <212> DNA
 <213> Mouse

<220>
 <221> CDS
 <222> (46)...(849)

<221> sig_peptide
 <222> (46)...(150)

<400> 4

ggcgcgtgag	cctcaggatg	aaccctgtgt	ttcctagcgg	gctgt	atg	gct	ctc	ggt	57
					Met	Ala	Leu	Gly	
					-35				
ttt	tct	caa	cgc	tcc	cgt	atg	gtg	gcc	105
Phe	Ser	Gln	Arg	Ser	Arg	Met	Val	Ala	
-30					-25			-20	
ctg	cta	gtg	ctc	ttg	ctg	atg	gta	gcc	153
Leu	Leu	Val	Leu	Leu	Leu	Met	Val	Ala	
-15				-10				-5	1
ggc	agc	ggc	tgc	cgg	gtc	ggg	gcc	tcc	201
Gly	Ser	Gly	Cys	Arg	Val	Gly	Ala	Ser	
		5				10			
ggc	cgt	gaa	gct	gag	ggc	tgt	ggc	acc	249
Gly	Arg	Glu	Ala	Glu	Gly	Cys	Gly	Thr	
	20				25			30	
tca	ttt	gag	ctc	ggt	gat	gga	gcc	aac	297
Ser	Phe	Glu	Leu	Gly	Asp	Gly	Ala	Asn	
35				40				45	
ctc	tgg	aac	cag	cag	gat	ggc	acc	ctg	345
Leu	Trp	Asn	Gln	Gln	Asp	Gly	Thr	Leu	
50				55				60	65
agt	gag	gag	gag	cgt	ggc	cga	ctc	cgg	393
Ser	Glu	Glu	Glu	Arg	Gly	Arg	Leu	Arg	
				70				75	80
ctc	tac	agg	gtc	cgg	gtc	ccg	agg	cgg	441
Leu	Tyr	Arg	Val	Arg	Val	Pro	Arg	Arg	
			85				90		
gaa	gct	ggc	ggc	cat	gtg	tct	tcc	ttc	489
Glu	Ala	Gly	Gly	His	Val	Ser	Ser	Phe	
								Val	

<221> sig_peptide
 <222> (346)...(420)

<400> 5

ggcaccagac	gactggggcc	ctaccccatg	tggaacaact	caccatgcgt	ctggaccccg	60
gtgtgggccc	ctcagtata	ggcgtagtga	cagtacagct	gacagctaga	gggatgatat	120
acccccaaac	tagtggactt	tgaagttttc	ttcccagccg	gttccagcct	cctggaacaa	180
ccatgtcgcc	agttttgcgc	gtgccaaatt	cacggcgctg	cccaagcgga	gctgctatct	240
gaattctcct	tggatgtggc	aaagggaaat	gaacgcaaaa	ggtgccgctg	gaagtgtccg	300
acctagagaa	atatgtagac	cggagccctg	ttaccttctt	ccagc atg gac ttc ctg		357
				Met Asp Phe Leu		
				-25		

ggt ctc ttc ttg ttc tac ttg gcc ttc tta ttg att tgt gtt gtc ctg	405
Val Leu Phe Leu Phe Tyr Leu Ala Phe Leu Leu Ile Cys Val Val Leu	
-20 -15 -10	

atc tgc atc ttc aca aaa agc cag cgt ttg aag gcc gtg gtc ctt gga	453
Ile Cys Ile Phe Thr Lys Ser Gln Arg Leu Lys Ala Val Val Leu Gly	
-5 1 5 10	

gga gca cag gta gca ctg gtc ctt ggg tac tgc ccg gat gtg aat act	501
Gly Ala Gln Val Ala Leu Val Leu Gly Tyr Cys Pro Asp Val Asn Thr	
15 20 25	

gtg tta ggt gct agt ctg gaa ggc tca caa gac aag ggg atg	543
Val Leu Gly Ala Ser Leu Glu Gly Ser Gln Asp Lys Gly Met	
30 35 40	

tgagtcttgt	ctttaatcct	ggcacttggg	aggctgaggc	ttcggggcca	ggtggggcta	603
catcgcaaga	gcctgtgtcc	aaacaaacaa	aacgttgtct	ttttgctttg	agataggtcg	663
aataggtcga	attttcaagg	ttggcttttt	aaacagtgtg	taatgtctgt	atttggttgt	723
gactcctggt	tgccatagaca	tgctttagtc	agggtgtgaac	tcaggaggac	acaagtgacc	783
agaaagctga	gcacttagct	gtcaatcttc	ccttcacatt	gtcccatctg	tcttcccttg	843
ggggtcaaag	caaagtgggg	gcaagtagcc	acgaaggggt	tgacttgga	ggaccctggg	903
gatctggagg	ccaatcttga	gcatggagca	gacctgaggg	ttaggaagc	ccacgtccac	963
agcagcctct	gcacaccccc	tttccccaca	gactccaaca	gacacattct	gtgcagtcaa	1023
ggtagaaatg	gaggtgttct	ctacacctcc	taaatcctag	cacttaggaa	gctgaggcag	1083
gattatgaat	tccaggctag	ctcgggttat	gtaatgagac	tgtttcaaac	acagagcgga	1143
gccgaggaga	tggtctgggc	gtcacagagc	tgccgtgcaa	ccagaactgg	aggg	1197

<210> 6
 <211> 1435
 <212> DNA
 <213> Mouse

<220>
 <221> CDS
 <222> (2)...(1015)

<221> sig_peptide
 <222> (2)...(46)

<400> 6

c atg ggc gcc gtc tgg tca gcc ctg ctg gtc ggc ggg ggt cta gct gga	49
Met Gly Ala Val Trp Ser Ala Leu Leu Val Gly Gly Gly Leu Ala Gly	
-15 -10 -5 1	

gcg	ctc	atc	ctg	tgg	ctg	ctg	cgg	gga	gac	tct	ggg	gcc	ccg	ggg	aaa	97
Ala	Leu	Ile	Leu	Trp	Leu	Leu	Arg	Gly	Asp	Ser	Gly	Ala	Pro	Gly	Lys	
			5				10						15			
gac	ggg	gtt	gcg	gag	ccg	ccg	cag	aag	ggc	gca	cct	cct	ggg	gag	gct	145
Asp	Gly	Val	Ala	Glu	Pro	Pro	Gln	Lys	Gly	Ala	Pro	Pro	Gly	Glu	Ala	
			20				25						30			
gcg	gcc	ccg	gga	gac	ggg	ccg	ggg	ggg	ggg	ggc	agt	ggc	ggc	ctg	agc	193
Ala	Ala	Pro	Gly	Asp	Gly	Pro	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Leu	Ser	
			35				40						45			
cct	gaa	cct	tcc	gat	cgg	gag	ctg	gtc	tcc	aaa	gca	gag	cat	ctt	cga	241
Pro	Glu	Pro	Ser	Asp	Arg	Glu	Leu	Val	Ser	Lys	Ala	Glu	His	Leu	Arg	
			50				55						60			65
gaa	agc	aac	gga	cat	ttg	att	tct	gag	agc	aaa	gat	ctt	ggg	aac	ctg	289
Glu	Ser	Asn	Gly	His	Leu	Ile	Ser	Glu	Ser	Lys	Asp	Leu	Gly	Asn	Leu	
			70						75			80				
ccg	gaa	gca	cag	cgg	ctg	cag	aat	gtt	gga	gca	gac	tgg	gtc	aat	gcc	337
Pro	Glu	Ala	Gln	Arg	Leu	Gln	Asn	Val	Gly	Ala	Asp	Trp	Val	Asn	Ala	
			85						90			95				
aga	gag	ttt	gtt	cct	gtt	ggg	aag	att	cca	gac	aca	cac	tcc	agg	gcc	385
Arg	Glu	Phe	Val	Pro	Val	Gly	Lys	Ile	Pro	Asp	Thr	His	Ser	Arg	Ala	
			100			105						110				
gac	tct	gaa	gcg	gca	aga	aat	caa	agc	cca	gga	tct	cat	gga	gga	gaa	433
Asp	Ser	Glu	Ala	Ala	Arg	Asn	Gln	Ser	Pro	Gly	Ser	His	Gly	Gly	Glu	
			115			120						125				
tgg	aga	ctc	ccc	aaa	gga	caa	gaa	aca	gct	gtc	aaa	gta	gct	ggc	agt	481
Trp	Arg	Leu	Pro	Lys	Gly	Gln	Glu	Thr	Ala	Val	Lys	Val	Ala	Gly	Ser	
130			135						140			145				
gtg	gcc	gca	aag	ctg	gcc	tcc	agc	agc	ctg	ctt	gtg	gac	aga	gct	aaa	529
Val	Ala	Ala	Lys	Leu	Ala	Ser	Ser	Ser	Leu	Leu	Val	Asp	Arg	Ala	Lys	
			150						155			160				
gca	gtc	agt	cag	gac	cag	gca	ggc	cac	gag	gac	tgg	gaa	gtg	gtg	tct	577
Ala	Val	Ser	Gln	Asp	Gln	Ala	Gly	His	Glu	Asp	Trp	Glu	Val	Val	Ser	
			165						170			175				
agg	cac	tca	tct	tgg	ggg	agt	gtt	ggg	ttg	ggg	ggc	agt	ctt	gag	gct	625
Arg	His	Ser	Ser	Trp	Gly	Ser	Val	Gly	Leu	Gly	Gly	Ser	Leu	Glu	Ala	
			180			185						190				
tct	agg	tta	agt	cta	aat	cag	aga	atg	gac	gac	agc	aca	aac	agt	ctt	673
Ser	Arg	Leu	Ser	Leu	Asn	Gln	Arg	Met	Asp	Asp	Ser	Thr	Asn	Ser	Leu	
			195			200						205				
gtg	gga	gga	aga	ggc	tgg	gaa	gta	gat	ggg	aaa	gtg	gca	tct	ctg	aaa	721
Val	Gly	Gly	Arg	Gly	Trp	Glu	Val	Asp	Gly	Lys	Val	Ala	Ser	Leu	Lys	
210			215						220			225				

cct caa cag gtc agc atc cag ttc cag gtg cac tac acc aca aac acc	769
Pro Gln Gln Val Ser Ile Gln Phe Gln Val His Tyr Thr Thr Asn Thr	
230 235 240	

gat gtg cag ttc att gca gtg act gga gac cat gag agc ctt ggg aga	817
Asp Val Gln Phe Ile Ala Val Thr Gly Asp His Glu Ser Leu Gly Arg	
245 250 255	

tgg aac aca tac atc cca ctc cac tac tgc aaa gac ggg ctc tgg tct	865
Trp Asn Thr Tyr Ile Pro Leu His Tyr Cys Lys Asp Gly Leu Trp Ser	
260 265 270	

cat tct gtc ttc ctg cct gca gac aca gtg gtg gag tgg aag ttc gtg	913
His Ser Val Phe Leu Pro Ala Asp Thr Val Val Glu Trp Lys Phe Val	
275 280 285	

ttg gta gag aat aag gaa gtt act cgt tgg gaa gaa tgc agc aat aga	961
Leu Val Glu Asn Lys Glu Val Thr Arg Trp Glu Glu Cys Ser Asn Arg	
290 295 300 305	

ttc ctg cag act ggc cat gag gat aaa gtg gtt cat ggg tgg tgg ggg	1009
Phe Leu Gln Thr Gly His Glu Asp Lys Val Val His Gly Trp Trp Gly	
310 315 320	

att cac tgactcagtt ttcagagcat ccaagaggct gcagcagaat gtggacaagg	1065
Ile His	

ctaaggcttt agagcgcact gcatagctta aagtaaaggc ggtgtgattc caattgtagc	1125
catcagggct ctttcagatt tgctagtgtg gcttttgtcc aaaatgtagg aagatgtatg	1185
cctgcagata atgcttcttg taanctggca cttgtccctt attgtattga ctggtttgtg	1245
ctgacacatc aggacttgag gaattgatca tcctgggtag ttgcatcttg ggtagtacac	1305
ctgaggtatg gactacatat gggcaaggag caactaagca actgcacggg tacaaggtag	1365
agcgccctta gcagctctta gactagaaaag actacaataa gccccatcaa acacagctaa	1425
agcaacactg	1435

<210> 7
 <211> 1131
 <212> DNA
 <213> Mouse

<400> 7

ggcaccagcc cggcttctgt gctccgctca gtctccagcg atccctccct acctccgccc	60
tccatggcgt cgctcctgtg ctgtgggcct aagctggccg cctgtggcat cgctcctcagc	120
gcctggggag tgatcatggt gataatgctc gggatatttt tcaatgtcca ttctgctgtg	180
ttaattgagg acgttccctt cacagagaaa gattttgaga acggtcctca gaacatatac	240
aacctgtacg agcaagtcag ctacaactgt ttcacgccc cgggcctcta cctcctcctc	300
ggaggcttct ctttctgcc agttcgtctc aacaagcgca aggaatacat ggtgcgctag	360
agcgcggtcc gcctctccct cccagcccc cttctctatt taaagactcc gcagactccg	420
tcccactcat ctggcgctct ttgggacttg tgaccctagc gagacgtcat ccctggccct	480
gcaaaactgc gccagcctc tggaggagac cgaggggtgac cgcgccccgt tctgaactac	540
aataaaaaga agcgggtccc cctaagcttg ctgtctgtgc tttcaggag gggcgggccc	600
gggctggaag gggctgagac cggcctcatc gaggagtcg gacctccga cggaagtga	660
atgaagctag ccggaagtga agcaacgtct tccacctcg cttcctccgc gcggcgaggc	720
cccttgagtg actggggaga ggtcgggtct cggccaatca gctgcaggga gggcgggact	780
ttctgcgcgg gagcccgagc ggccggctgc cgggctctcc gtggtttcca gctcgcgtgg	840
tggtggtggc ggccggagcgt ctccgtgagg aggtgcgcgg ggccatgacg tcagcgtcca	900

ccaaggttgg agagatcttc tccgcgcccg gcgcccctt cacgaagctc ggggagttga	960
cgatgcagct gcatccagtc tccgactctt cccctgccgg tgccaagtgg acggagacgg	1020
agatagagat gctgagggct gctgtgaagc gctttgggga cgatcttaat cacatcagct	1080
gtgtcatcaa ggaacggaca gtggctcaga taaagaccac tgtgaagcga a	1131

<210> 8
 <211> 1357
 <212> DNA
 <213> Mouse

<220>
 <221> CDS
 <222> (150) ... (989)

<400> 8

gggagggcct ggaggccgag gcgggcaggc accagccaga gcagctggcg gcagacggca	60
ggcagacagt cagaccgtct agcgggcctg gcttgccctac ctggcagctg caccgggtcc	120
ttcaccaga gctggttcca tagctcaac atg gtc ccc tgg ttc ctc ctg tct	173
Met Val Pro Trp Phe Leu Leu Ser	
1 5	

ctg ctg cta ctt gcg agg cct gtg cct ggg gtg gcc tac tct gtg tca	221
Leu Leu Leu Leu Ala Arg Pro Val Pro Gly Val Ala Tyr Ser Val Ser	
10 15 20	

ctc ccg gcc tcc ttc ctg gag gat gta gcc ggc agc ggg gaa gct gag	269
Leu Pro Ala Ser Phe Leu Glu Asp Val Ala Gly Ser Gly Glu Ala Glu	
25 30 35 40	

ggc tct tca gcc tct tcc ccg agc ctg ccg ccg cct ggg act cca gcc	317
Gly Ser Ser Ala Ser Pro Ser Leu Pro Pro Pro Gly Thr Pro Ala	
45 50 55	

ttc agt ccc aca ccg gag aga ccc cag ccc aca gct ctg gac ggc ccc	365
Phe Ser Pro Thr Pro Glu Arg Pro Gln Pro Thr Ala Leu Asp Gly Pro	
60 65 70	

gtg cca ccc acc aac ctc ctg gaa ggg atc atg gat ttc ttc cgg cag	413
Val Pro Pro Thr Asn Leu Leu Glu Gly Ile Met Asp Phe Phe Arg Gln	
75 80 85	

tac gtg atg ctc atc gcg gtg gtg ggc tcg ctg acc ttc ctc atc atg	461
Tyr Val Met Leu Ile Ala Val Val Gly Ser Leu Thr Phe Leu Ile Met	
90 95 100	

ttc ata gtc tgc gcc gcc ctc atc acg cgc cag aag cac aag gcc aca	509
Phe Ile Val Cys Ala Ala Leu Ile Thr Arg Gln Lys His Lys Ala Thr	
105 110 115 120	

gcc tac tac cca tcc tcg ttc cct gaa aag aag tat gtg gac cag aga	557
Ala Tyr Tyr Pro Ser Ser Phe Pro Glu Lys Lys Tyr Val Asp Gln Arg	
125 130 135	

gac cgg gct ggg gga ccc cgt acc ttc agc gag gtc cct gac agg gca	605
Asp Arg Ala Gly Gly Pro Arg Thr Phe Ser Glu Val Pro Asp Arg Ala	
140 145 150	

cct gac agc cgg cat gaa gaa ggc ctg gac acc tcc cat cag ctc cag	653
Pro Asp Ser Arg His Glu Glu Gly Leu Asp Thr Ser His Gln Leu Gln	
155 160 165	

gct gac att ctg gct gct acc cag aac ctc cgg tct cca gct aga gcc	701
Ala Asp Ile Leu Ala Ala Thr Gln Asn Leu Arg Ser Pro Ala Arg Ala	
170 175 180	

ctg cca ggc aat ggg gag gga gca aag cct gtg aag ggt ggg tcg gag	749
Leu Pro Gly Asn Gly Glu Gly Ala Lys Pro Val Lys Gly Gly Ser Glu	
185 190 195 200	

gag gag gag gaa gag gtg ctc agc ggt cag gag gag gcc cag gaa gcc	797
Glu Glu Glu Glu Glu Val Leu Ser Gly Gln Glu Glu Ala Gln Glu Ala	
205 210 215	

cca gta tgt ggg gtc act gaa gag aag ctg ggg gtc cca gag gag tcg	845
Pro Val Cys Gly Val Thr Glu Glu Lys Leu Gly Val Pro Glu Glu Ser	
220 225 230	

gtc tca gca gag gct gaa ggg gtt cct gcc acc agt gag ggc caa ggg	893
Val Ser Ala Glu Ala Glu Gly Val Pro Ala Thr Ser Glu Gly Gln Gly	
235 240 245	

gaa gca gaa ggg tct ttc tcc tta gcc cag gaa tcc cag gga gca act	941
Glu Ala Glu Gly Ser Phe Ser Leu Ala Gln Glu Ser Gln Gly Ala Thr	
250 255 260	

ggc cct cct gaa agt ccc tgt gcc tgc aac aga gtc tcc ccc agt gtc	989
Gly Pro Pro Glu Ser Pro Cys Ala Cys Asn Arg Val Ser Pro Ser Val	
265 270 275 280	

taacaggccc cagaactgct gggaccgaa tgttggtcc ttgagggtca cctctttggt	1049
caagaaaggc attcagctct aactgctcct tgataccacg tggcttggtc attgctggtg	1109
ccaaggctga ccccgaactg gcagagccga tgccctctgg tgcaccccag gaaacatctc	1169
cccaagtctc agcgccctta atgactcttg ccaccctggg ggcttcaccc taacgcacca	1229
cttctctgga aggggaaggc cagacacatg ccagttgggg ctgcatgagg cagtccctcag	1289
agcagaaggg gaccaggcca gagggcacct gtgacggggc aaactgcata tcggctgtgg	1349
agaccaga	1357

<210> 9
 <211> 815
 <212> DNA
 <213> Mouse

<220>
 <221> CDS
 <222> (119)...(682)

<221> sig_peptide
 <222> (119)...(205)

<400> 9	
aggctgacac tagtggatcc aaagaattcg gcacgagggg acgaggagcg gtcgcgtgcg	60
cggagagcag ctctgggcgc cgggcggttg ctgcgggcgc tcaggggccc tgggaaca	118
atg gcg ctg tgc gcg cgg gcc gcg ctg ctg ctg ggc gtg ctg cag gtg	166
Met Ala Leu Cys Ala Arg Ala Ala Leu Leu Leu Gly Val Leu Gln Val	

- 15

<220>
<221> CDS

<222> (13) ... (963)

<221> sig_peptide

<400> 10

ctg gtc tgg aca gtg gga tcc gtg ggc gcc gtg atg ggc tcc gag gat 99
Leu Val Trp Thr Val Gly Ser Val Gly Ala Val Met Gly Ser Glu Asp
-10 -5 1

ggc	caa	gaa	ctc	tgt	ggc	aac	aac	aac	ggt	acc	tac	atc	tcg	tcg	tgt	675
Gly	Gln	Glu	Leu	Cys	Gly	Asn	Asn	Asn	Val	Thr	Tyr	Ile	Ser	Ser	Cys	
180					185					190					195	

cac	ctg	cgc	cag	gcc	act	tgc	ttc	ctg	ggc	cgc	tcc	att	ggg	ggt	cgg	723
His	Leu	Arg	Gln	Ala	Thr	Cys	Phe	Leu	Gly	Arg	Ser	Ile	Gly	Val	Arg	
				200					205					210		

cac	cca	ggc	atc	tgc	aca	ggg	ggc	ccc	aag	ttc	ctg	aag	tct	ggc	gat	771
His	Pro	Gly	Ile	Cys	Thr	Gly	Gly	Pro	Lys	Phe	Leu	Lys	Ser	Gly	Asp	
			215					220					225			

gct	gcc	att	ggt	gat	atg	gtc	cct	ggc	aag	ccc	atg	tgt	ggt	gag	agc	819
Ala	Ala	Ile	Val	Asp	Met	Val	Pro	Gly	Lys	Pro	Met	Cys	Val	Glu	Ser	
		230					235					240				

ttc	tct	gac	tac	cct	cca	ctt	ggg	cgc	ttt	gct	ggt	cgt	gac	atg	agg	867
Phe	Ser	Asp	Tyr	Pro	Pro	Leu	Gly	Arg	Phe	Ala	Val	Arg	Asp	Met	Arg	
		245				250					255					

cag	aca	ggt	gct	gtg	ggg	gtc	atc	aaa	gct	gtg	gac	aag	aag	gct	gct	915
Gln	Thr	Val	Ala	Val	Gly	Val	Ile	Lys	Ala	Val	Asp	Lys	Lys	Ala	Ala	
260					265					270				275		

gga	gct	ggc	aaa	gtc	acc	aag	tct	gcc	cag	aaa	gct	cag	aag	gct	aaa	963
Gly	Ala	Gly	Lys	Val	Thr	Lys	Ser	Ala	Gln	Lys	Ala	Gln	Lys	Ala	Lys	
				280					285					290		

tgaatattac	ccctaacacc	tgccacccca	gtcttaataca	gtgggtggaag	aacgggtctca	1023
gaactggttg	tctcaattgg	ccatttaagt	ttaatagtaa	aagactgggt	aatgataaca	1083
atgcatcgta	aaaccttcag	aaggaaagaa	tgttggtggac	catttt		1129

<210> 11
 <211> 196
 <212> PRT
 <213> Mouse

<400> 11															
Val	Leu	Asn	Gly	Ser	Ile	Ser	Pro	Leu	Trp	Ala	Val	Ala	Pro	Thr	Leu
1				5					10					15	
Gln	Val	Leu	Ser	Leu	Arg	Asp	Val	Gly	Leu	Gly	Ser	Gly	Ala	Ala	Glu
			20					25					30		
Met	Asp	Phe	Ser	Ala	Phe	Gly	Asn	Leu	Arg	Ala	Leu	Asp	Leu	Ser	Gly
		35					40					45			
Asn	Ser	Leu	Thr	Ser	Phe	Gln	Lys	Phe	Lys	Gly	Ser	Leu	Ala	Leu	Arg
		50				55					60				
Thr	Leu	Asp	Leu	Arg	Arg	Asn	Ser	Leu	Thr	Ala	Leu	Pro	Gln	Arg	Val
65					70					75				80	
Val	Ser	Glu	Gln	Pro	Leu	Arg	Gly	Leu	Gln	Thr	Ile	Tyr	Leu	Ser	Gln
				85					90					95	
Asn	Pro	Tyr	Asp	Cys	Cys	Gly	Val	Glu	Gly	Trp	Gly	Ala	Leu	Gln	Gln
			100					105					110		
His	Phe	Lys	Thr	Val	Ala	Asp	Leu	Ser	Met	Val	Thr	Cys	Asn	Leu	Ser
		115					120					125			
Ser	Lys	Ile	Val	Arg	Val	Val	Glu	Leu	Pro	Glu	Gly	Leu	Pro	Gln	Gly
		130					135					140			

Cys Lys Trp Glu Gln Val Asp Thr Gly Leu Phe Tyr Leu Val Leu Ile
 145 150 155 160
 Leu Pro Ser Cys Leu Thr Leu Leu Val Ala Cys Thr Val Val Phe Leu
 165 170 175
 Thr Phe Lys Lys Pro Leu Leu Gln Val Ile Lys Ser Arg Cys His Trp
 180 185 190
 Ser Ser Ile Tyr
 195

<210> 12
 <211> 174
 <212> PRT
 <213> Mouse

<400> 12
 Met Ala Pro Ala Asn Leu Gly Leu Thr Pro His Trp Val Met Leu Leu
 1 5 10 15
 Gly Ala Val Leu Leu Leu Leu Ser Gly Ala Ser Ala Gln Glu Pro
 20 25 30
 Pro Arg Val Gly Cys Ser Glu Tyr Thr Asn Arg Ser Cys Glu Glu Cys
 35 40 45
 Leu Arg Asn Val Ser Cys Leu Trp Cys Asn Glu Asn Lys Ala Cys Met
 50 55 60
 Asp Tyr Pro Val Arg Lys Ile Leu Pro Pro Ala Ser Leu Cys Lys Leu
 65 70 75 80
 Ser Ser Ala Arg Trp Gly Val Cys Trp Val Asn Phe Glu Ala Leu Ile
 85 90 95
 Ile Thr Met Ser Val Leu Gly Gly Ser Val Leu Leu Gly Ile Thr Val
 100 105 110
 Cys Cys Cys Tyr Cys Cys Arg Arg Lys Lys Ser Arg Lys Pro Asp Lys
 115 120 125
 Ser Asp Glu Arg Ala Met Arg Glu Gln Glu Glu Arg Val Arg Gln
 130 135 140
 Glu Glu Arg Arg Ala Glu Met Lys Ser Arg His Asp Glu Ile Arg Lys
 145 150 155 160
 Lys Tyr Gly Leu Phe Lys Glu Gln Asn Pro Tyr Glu Lys Phe
 165 170

<210> 13
 <211> 106
 <212> PRT
 <213> Mouse

<400> 13
 Ala Pro Gly Lys Pro Cys Arg Gly Leu Ser His Arg Thr Cys Ile Leu
 1 5 10 15
 Arg Cys Arg Pro Met Pro Leu Phe Thr His Pro Ser Pro Cys His Leu
 20 25 30
 Cys Gly Pro Cys Ser Thr Thr Ser Pro Ser Thr Trp Val Leu Cys Pro
 35 40 45
 Leu Pro Met Ser Pro Leu Cys Pro Thr Cys Val Ser Thr Met Thr Leu
 50 55 60
 Ala Thr Cys Thr Cys Pro Trp Ser Thr Thr Cys Pro Cys Thr Leu Ala
 65 70 75 80
 Pro Asn His Gly Ile Ala Ser Asp Thr Gln Ser Pro Val Ser Arg Ala
 85 90 95
 Glu Ser Val Gly Gly Pro Ser Leu Ile Phe

105

<400> 14

<400> 15

14

Gly Met
65

<210> 16
<211> 338
<212> PRT
<213> Mouse

<400> 16

Met Gly Ala Val Trp Ser Ala Leu Leu Val Gly Gly Gly Leu Ala Gly
1 5 10 15
Ala Leu Ile Leu Trp Leu Leu Arg Gly Asp Ser Gly Ala Pro Gly Lys
20 25 30
Asp Gly Val Ala Glu Pro Pro Gln Lys Gly Ala Pro Pro Gly Glu Ala
35 40 45
Ala Ala Pro Gly Asp Gly Pro Gly Gly Gly Gly Ser Gly Gly Leu Ser
50 55 60
Pro Glu Pro Ser Asp Arg Glu Leu Val Ser Lys Ala Glu His Leu Arg
65 70 75 80
Glu Ser Asn Gly His Leu Ile Ser Glu Ser Lys Asp Leu Gly Asn Leu
85 90 95
Pro Glu Ala Gln Arg Leu Gln Asn Val Gly Ala Asp Trp Val Asn Ala
100 105 110
Arg Glu Phe Val Pro Val Gly Lys Ile Pro Asp Thr His Ser Arg Ala
115 120 125
Asp Ser Glu Ala Ala Arg Asn Gln Ser Pro Gly Ser His Gly Gly Glu
130 135 140
Trp Arg Leu Pro Lys Gly Gln Glu Thr Ala Val Lys Val Ala Gly Ser
145 150 155 160
Val Ala Ala Lys Leu Ala Ser Ser Ser Leu Val Asp Arg Ala Lys
165 170 175
Ala Val Ser Gln Asp Gln Ala Gly His Glu Asp Trp Glu Val Val Ser
180 185 190
Arg His Ser Ser Trp Gly Ser Val Gly Leu Gly Gly Ser Leu Glu Ala
195 200 205
Ser Arg Leu Ser Leu Asn Gln Arg Met Asp Asp Ser Thr Asn Ser Leu
210 215 220
Val Gly Gly Arg Gly Trp Glu Val Asp Gly Lys Val Ala Ser Leu Lys
225 230 235 240
Pro Gln Gln Val Ser Ile Gln Phe Gln Val His Tyr Thr Thr Asn Thr
245 250 255
Asp Val Gln Phe Ile Ala Val Thr Gly Asp His Glu Ser Leu Gly Arg
260 265 270
Trp Asn Thr Tyr Ile Pro Leu His Tyr Cys Lys Asp Gly Leu Trp Ser
275 280 285
His Ser Val Phe Leu Pro Ala Asp Thr Val Val Glu Trp Lys Phe Val
290 295 300
Leu Val Glu Asn Lys Glu Val Thr Arg Trp Glu Glu Cys Ser Asn Arg
305 310 315 320
Phe Leu Gln Thr Gly His Glu Asp Lys Val Val His Gly Trp Trp Gly
325 330 335
Ile His

<210> 17
<211> 119
<212> PRT

<213> Mouse

<400> 17

Gly Thr Ser Pro Ala Ser Val Leu Arg Ser Val Ser Ser Asp Pro Ser
1 5 10 15
Leu Pro Pro Pro Ser Met Ala Ser Leu Leu Cys Cys Gly Pro Lys Leu
20 25 30
Ala Ala Cys Gly Ile Val Leu Ser Ala Trp Gly Val Ile Met Leu Ile
35 40 45
Met Leu Gly Ile Phe Phe Asn Val His Ser Ala Val Leu Ile Glu Asp
50 55 60
Val Pro Phe Thr Glu Lys Asp Phe Glu Asn Gly Pro Gln Asn Ile Tyr
65 70 75 80
Asn Leu Tyr Glu Gln Val Ser Tyr Asn Cys Phe Ile Ala Ala Gly Leu
85 90 95
Tyr Leu Leu Leu Gly Gly Phe Ser Phe Cys Gln Val Arg Leu Asn Lys
100 105 110
Arg Lys Glu Tyr Met Val Arg
115

<210> 18

<211> 280

<212> PRT

<213> Mouse

<400> 18

Met Val Pro Trp Phe Leu Leu Ser Leu Leu Leu Leu Ala Arg Pro Val
1 5 10 15
Pro Gly Val Ala Tyr Ser Val Ser Leu Pro Ala Ser Phe Leu Glu Asp
20 25 30
Val Ala Gly Ser Gly Glu Ala Glu Gly Ser Ser Ala Ser Ser Pro Ser
35 40 45
Leu Pro Pro Pro Gly Thr Pro Ala Phe Ser Pro Thr Pro Glu Arg Pro
50 55 60
Gln Pro Thr Ala Leu Asp Gly Pro Val Pro Pro Thr Asn Leu Leu Glu
65 70 75 80
Gly Ile Met Asp Phe Phe Arg Gln Tyr Val Met Leu Ile Ala Val Val
85 90 95
Gly Ser Leu Thr Phe Leu Ile Met Phe Ile Val Cys Ala Ala Leu Ile
100 105 110
Thr Arg Gln Lys His Lys Ala Thr Ala Tyr Tyr Pro Ser Ser Phe Pro
115 120 125
Glu Lys Lys Tyr Val Asp Gln Arg Asp Arg Ala Gly Gly Pro Arg Thr
130 135 140
Phe Ser Glu Val Pro Asp Arg Ala Pro Asp Ser Arg His Glu Glu Gly
145 150 155 160
Leu Asp Thr Ser His Gln Leu Gln Ala Asp Ile Leu Ala Ala Thr Gln
165 170 175
Asn Leu Arg Ser Pro Ala Arg Ala Leu Pro Gly Asn Gly Glu Gly Ala
180 185 190
Lys Pro Val Lys Gly Gly Ser Glu Glu Glu Glu Glu Val Leu Ser
195 200 205
Gly Gln Glu Glu Ala Gln Glu Ala Pro Val Cys Gly Val Thr Glu Glu
210 215 220
Lys Leu Gly Val Pro Glu Glu Ser Val Ser Ala Glu Ala Glu Gly Val
225 230 235 240
Pro Ala Thr Ser Glu Gly Gln Gly Glu Ala Glu Gly Ser Phe Ser Leu

				245				250					255		
Ala	Gln	Glu	Ser	Gln	Gly	Ala	Thr	Gly	Pro	Pro	Glu	Ser	Pro	Cys	Ala
			260					265					270		
Cys	Asn	Arg	Val	Ser	Pro	Ser	Val								
			275				280								

<210> 19
 <211> 188
 <212> PRT
 <213> Mouse

<400> 19

Met	Ala	Leu	Cys	Ala	Arg	Ala	Ala	Leu	Leu	Leu	Gly	Val	Leu	Gln	Val
1				5				10						15	
Leu	Ala	Leu	Leu	Gly	Ala	Ala	Gln	Asp	Pro	Thr	Asp	Ala	Gln	Gly	Ser
			20				25						30		
Ala	Ser	Gly	Asn	His	Ser	Val	Leu	Thr	Ser	Asn	Ile	Asn	Ile	Thr	Glu
		35				40					45				
Asn	Thr	Asn	Gln	Thr	Met	Ser	Val	Val	Ser	Asn	Gln	Thr	Ser	Glu	Met
	50				55					60					
Gln	Ser	Thr	Ala	Lys	Pro	Ser	Val	Leu	Pro	Lys	Thr	Thr	Thr	Leu	Ile
65				70					75					80	
Thr	Val	Lys	Pro	Ala	Thr	Ile	Val	Lys	Ile	Ser	Thr	Pro	Gly	Val	Leu
			85					90						95	
Pro	His	Val	Thr	Pro	Thr	Ala	Ser	Lys	Ser	Thr	Pro	Asn	Ala	Ser	Ala
			100				105					110			
Ser	Pro	Asn	Ser	Thr	His	Thr	Ser	Ala	Ser	Met	Thr	Thr	Pro	Ala	His
		115				120					125				
Ser	Ser	Leu	Leu	Thr	Thr	Val	Thr	Val	Ser	Ala	Thr	Thr	His	Pro	Thr
	130				135					140					
Lys	Gly	Lys	Gly	Ser	Lys	Phe	Asp	Ala	Gly	Ser	Phe	Val	Gly	Gly	Ile
145				150					155					160	
Gly	Val	Asn	Thr	Gly	Ser	Phe	Ile	Tyr	Ser	Leu	His	Trp	Met	Gln	Asn
			165					170						175	
Val	Leu	Phe	Lys	Lys	Arg	His	Ser	Val	Pro	Lys	His				
			180					185							

<210> 20
 <211> 317
 <212> PRT
 <213> Mouse

<400> 20

Met	Arg	Ser	Gly	Ala	Leu	Trp	Pro	Leu	Leu	Trp	Gly	Ala	Leu	Val	Trp
1				5				10						15	
Thr	Val	Gly	Ser	Val	Gly	Ala	Val	Met	Gly	Ser	Glu	Asp	Ser	Val	Pro
			20				25						30		
Gly	Gly	Val	Cys	Trp	Leu	Gln	Gln	Gly	Arg	Glu	Ala	Thr	Cys	Ser	Leu
		35				40					45				
Val	Leu	Lys	Thr	Arg	Val	Ser	Arg	Glu	Glu	Cys	Cys	Ala	Ser	Gly	Asn
	50				55					60					
Ile	Asn	Thr	Ala	Trp	Ser	Asn	Phe	Thr	His	Pro	Gly	Asn	Lys	Ile	Ser
65				70					75					80	
Leu	Leu	Gly	Phe	Leu	Gly	Leu	Val	His	Cys	Leu	Pro	Cys	Lys	Asp	Ser
			85					90						95	
Cys	Asp	Gly	Val	Glu	Cys	Gly	Pro	Gly	Lys	Ala	Cys	Arg	Asn	Ala	Gly
			100					105					110		

